REMARKS

Claims 1-4 are pending and under consideration in the above-identified application. Claim 5 was previously cancelled.

In the Office Action of June 15, 2009, the Examiner rejected claims 1-4.

With this Amendment, claim 1 was amended and claim 2 was cancelled. No new matter has been introduced as a result of the amendments.

I. 35 U.S.C. § 103 Obviousness Rejection of Claims

Claims 1-4 were rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimoto et al. (EP 0704921 A1) in view of Fukui et al. (WO 02/21616), Ikeda et al (WO 01/29918) and Bito et al. (U.S. Patent No. 6,270,923). Applicant respectfully traverses this rejection.

The claims require a battery that includes an anode that is made up of an anode current collector having a plurality of layers. Additionally, the claims require that an outer anode active material layer is disposed on an outer winding surface of the outer current collector layer and an inner anode active material layer is disposed on an inner winding surface of the inner current collector layer. Each of the outer anode active material layer and the inner anode active material layer both include amorphous or microcrystalline compounds of silicon or tin having a particle diameter within the range of 0.1 μm to 35 μm.

Fujimoto et al. teaches a battery with active material on the current collector. Fujimoto et al., Abstract. Fujimoto et al. also teaches using compounds from groups IIIb, IVb and Vb for the negative active material. Fujimoto et al., page 3, lines 32-36. However, Fujimoto et al. does not teach or even fairly suggest that the outer anode active material layer and the inner anode active material layer both include amorphous or microcrystalline compounds of silicon or tin.

Furthermore, neither Fujimoto et al. or Bito et al. teach that the amorphous or microcrystalline compounds of silicon or tin having a particle diameter within the range of 0.1 μm to 35 μm. Fujimoto et al. teaches a particle size of 4.5 μm and Bito et al. teaches a particle size of 0.01 to 1 μm. Fujimoto et al., p. 7, line 6; Bito et al., Col. 14, lines 45-50. Neither of these references teach the range required by the claims, which prevents an undesirable reaction between particle surfaces and the electrolyte solution and poor reaction with lithium, which decrease capacity.

As noted by the Examiner, Bito et al. recognizes 1 μm as an end point of a range. Office Action page 13. Therefore Bito et al. does not teach or even fairly suggest expanding the range to 35 μm as required by the claim because it teaches that 1 μm is the maximum. Additionally, although Fujimoto et al. teaches a particle size of 4.5 μm, Fujimoto et al. does not teach a range the required claim limitations falls within. A prima facie case of obviousness exists when the claimed range overlaps or lies within a range disclosed by the prior art. MPEP 2144.05. Here, no such range is taught.

Fukui et al. teaches sintering active material particles with conductive metal powder on the surface of a current collector that is conductive metal foil. Fukui et al., Paragraph [0023]. Fukui et al. does not, however, teach or even fairly suggest the particle diameter range of the active particle materials required by the claims, or that the particles are amorphous or microcrystalline compounds.

Ikeda et al. teaches a battery that has a thin film on the current collector. Ikeda et al., Abstract. Ikeda et al. also teaches that a current collector can be formed by joining the back faces of two current collectors each having an active material layer on the front face. Ikeda et al., Col. 6, lines 40-45. Again, Applicant respectfully disagrees with the Examiner's statement that Ikeda

et al. requires a current collector that is made up of a plurality of layers. Rather, Ikeda et al. specifically describes the description of the current collector as two current collectors which are used to form a *single* current collector. Compare Ikeda et al., Col. 6, lines 40-45 *with* Col. 4, line 65- col. 5, line 6. As such, the single layer current collector required by Ikeda et al. is different from the current collector required by the claims, which has a plurality of layers. Therefore, Ikeda et al. does not teach a current collector with a plurality of layers as required by the claims.

Additionally, Ikeda et al. fails to teach or even fairly suggest that the outer anode active material layer and the inner anode active material layer both include amorphous or microcrystalline compounds of silicon or tin

As such, the cited references fail either singularly or in combination with each other to teach or even fairly suggest all the requirements of the claims. As such, claims 1- 4 are patentable over the cited references. Accordingly, Applicant respectfully requests that the above rejection be withdrawn.

II. Conclusion

In view of the above amendments and remarks, Applicant submits that all claims are clearly allowable over the cited prior art, and respectfully requests early and favorable notification to that effect.

Respectfully submitted,

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